

REMARKS

Claims 1-14 are all the claims pending in the application.

The present Amendment is in response to the Office Action dated May 13, 2004. In view of the foregoing amendments and the comments which follow, favorable reconsideration of the present application is respectfully requested.

Claims 1-14 are currently pending in the application. The Examiner has rejected claims 1-5 and 8-14 under §103 as being unpatentable over Japanese Publication 2001-218395, and, in companion rejections, has further rejected the same set of claims for double patenting over the claims of USP 6,404,096, or USP 6,531,803. Claims 6 and 7 have been rejected on both §103 and double patenting grounds, with the Examiner here citing the further patent to York (USP 6,555,944).

First, Applicants wish to clarify a few items regarding the cited prior art. Japanese Publication 2001-218395 is the Japanese counterpart of USP 6,404,096, and 6,531,803 is a divisional of 6,404,096. Accordingly, given that the three disclosures are identical, Applicants will treat the rejections based upon the Japanese publication as being equivalently based upon the '096 patent. Secondly, although the Examiner refers to one or more of these references by the name "Yonetani", the correct name of the first inventor is in fact "Kometani", and therefore Applicant will refer to the references using the latter name.

Turning first to the present invention, it is important to note at the outset that the fundamental embodiment of the invention is directed to an alternator construction which seeks to reduce electromagnetic noise generated during rotation of the alternator rotor 2. The focus specifically is upon third harmonic noise, as explained in detail between page 9, line 1 and page 10, line 5 of the present specification. By suppressing the third harmonic vibration, noise, torque ripples, and the like can be marketedly reduced.

By contrast, the Kometani references are fundamentally directed toward a related but different problem, namely the suppression of fifth and seventh harmonics or eleventh and

thirteenth harmonics which respectively generate a noise peak at the sixth or twelfth harmonic frequencies. Historically, these two problems have defied a common solution; that is, steps taken to reduce the third harmonic noise have inevitably wound up increasing the sixth harmonic noise and or the twelfth harmonic noise, and visa versa. Only very recently have solutions been found that have more than a salutary effect on the broader spectrum of harmonics.

Accordingly, with the foregoing as background, it is apparent that the Kometani references are directed to solutions to the sixth and twelfth harmonic noise issues, and not third harmonic noise. As explained before, it would generally be expected that the Kometani solutions would at best have no effect on, and more likely could in fact worsen, the third harmonic noise component.

With respect to the third harmonic, as described in the present specification, a theoretical minimum in the noise level can be achieved by setting the clearance space between the magnetic poles to a value close to 60°, as expressed in electrical angle. Through experimentation (see, e.g., Fig. 3) it has been found that a value between 50° and 70° is result-effective in noise reduction. Accordingly, this is the range that has been claimed in independent claim 1, and is a technical departure from the Kometani disclosures.

The Examiner acknowledges the above distinction between Kometani and the claimed invention, but alleges that one could apply the “essential teaching concept” of Kometani to arrive at the ranges currently claimed. As already explained above, this is simply not true, Kometani is seeking a solution to a different problem, and further because it is well known that solutions to that problem typically have no effect on, or even worsen, the third harmonic noise problem to which this aspect of the invention is directed. Indeed, it can be seen from the Kometani disclosure itself that application of Kometani’s “essential teaching concept” results in the derivation of quite different values for the pole widths.

Independent claim 1 and a number of the dependent claims have been voluntarily amended herewith simply for clarity of expression purposes, without change in claim scope. Of the claims that have been amended substantively, claim 6 has been amended simply to insert a

limitation previously in claim 7, and claim 12 has been amended to add a limitation regarding the provision of a magnet on the interior step part of the pole. Further, claim 14 has been amended in order to clarify the somewhat complex shape and structure which is being claimed. These claims are believed patentable by dependency, and in addition for the particular structures now more specifically claimed, which are found in neither the Kometani disclosures or that of York. Applicants submits that no conceivable combination of the features of York with Kometani would result in the structure as claimed in claims 6 and 7 in particular.

Finally, concerning the double patenting rejections, as a path of least resistance, Applicants will shortly submit a Terminal Disclaimer with respect to the '096 and '803 patents, thereby rendering these rejections moot.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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